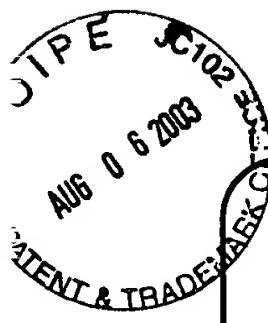


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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

		Application Number	09/902,953 -
		Filing Date	July 11, 2001
		First Named Inventor	Achim Krotz
		Art Unit	1635
		Examiner Name	J. Schultz
Total Number of Pages in This Submission		Attorney Docket Number	ISIC0002-100(ISIS-4797)

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment / Response	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input checked="" type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	Statement Under 37 CFR 3.73(b) with Table A attached; copy of recorded Assignment
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s)	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Michael P. Straher
Signature	
Date	August 4, 2003

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Michael P. Straher
Signature	
Date	August 4, 2003

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**POWER OF ATTORNEY WITH REVOCATION AND
CHANGE OF CORRESPONDENCE ADDRESS**

I hereby revoke all previous powers of attorney or authorizations of agent given in the applications identified in Table A attached hereto, and appoint

Practitioners at Customer Number: 34138

PLACE CUSTOMER NUMBER BAR
34138

CODE LABET HERE
PATENT TRADEMARK OFFICE

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please change the Correspondence Address for all applications identified in Table A to:

Practitioners at Customer Number: 34138

I am the:

Applicant/Inventor.

Assignee of record of the entire interest. (A statement under 37 CFR 3.73(b) is enclosed.)

Respectfully submitted,

ISIS PHARMACEUTICALS, INC.

Date: 5-30-03

By: _____

Name: B. Lynne Parshall
Title: Executive Vice President

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

STATEMENT UNDER 37 CFR 3.73(b)

Applicant, **ISIS Pharmaceuticals, Inc.**, a corporation, states that it is:

the assignee of the entire right, title, and interest of the applications identified in Table A attached hereto.

The extent (by, percentage) of its ownership interest is **100%** in the patent applications identified in Table A by virtue of:

a copy of the pertinent assignment from the inventor(s) of the patent applications identified in Table A is enclosed herewith.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Respectfully submitted,
ISIS PHARMACEUTICALS, INC.

Date: 5-30-03

By: _____

Name: B. Lynne Parshall
Title: Executive Vice President

TABLE A

SERIAL NO.	FILING DATE	INVENTORS	EXAMINER	ART UNIT	TITLE
09/546,596	April 10, 2000	Cook, Manoharan, Bennett	J.N. Friedman	1637	Compositions and Methods for Enhanced Biostability and Altered Biodistribution of Oligonucleotides in Mammals
09/902,953	July 11, 2001	Krotz, Mehta	J.Schultz	1635	Enhancement of the Stability of Oligonucleotides Comprising Phosphorothioate Linkages by addition of Water-Soluble Antioxidants
09/944,493	August 22, 2001	Weinbach, Tillman, Geary, Hardee	Not Yet Determine	1615	Pulsatile Release Compositions and Methods for Enhanced Intestinal Drug Absorption
09/935,316	August 22, 2002	Teng, Weinbach, Tillman, Geary, Hardee	Not yet determined	1632	Bioadhesive Compositions and Methods for Enhanced Intestinal Drug Absorption
10/029,598	December 21, 2001	Teng, Cook, Tillman, Hardee, Ecker, Manoharan	J. Epps	1635	Compositions and Methods for Non-Parenteral Delivery of Oligonucleotides
09/315,294	May 20, 1999	Mehita, Hardee, Cook, Ecker, Tsai, and Templin	M. Schmidt	1635	Compositions and Methods for Topical Delivery of Oligonucleotides
09/315,298	May 20, 1999	Teng, Cook, Tillman, Hardee, Ecker and Manoharan	J. Epps	1635	Compositions and Methods for Non-Parenteral Delivery of Oligonucleotides
09/108,673	July 1, 1998	Teng, and Hardee	W. Sandals	1636	Compositions and Methods for the Delivery of Oligonucleotides via the Alimentary Canal



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WOODCOCK WASHBURN LLP
EMMA R. DAILEY
ONE LIBERTY PLACE - 46TH FLOOR
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PTAS WOODCOCK WASHBURN KROTZ
Woodcock Washburn LLP

Commissioner for Trademarks
Arlington, VA 22202-3513
www.uspto.gov



102002966A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/19/2002

REEL/FRAME: 012622/0800
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNEE'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNEE:
KROTZ, ACHIM

DOC DATE: 11/30/2001

ASSIGNEE:
MEHTA, RAHUL

DOC DATE: 12/07/2001

ASSIGNEE:
ISIS PHARMACEUTICALS, INC.
2292 FARADAY AVENUE
CARLSBAD, CALIFORNIA 92008

SERIAL NUMBER: 09902953
PATENT NUMBER:

FILING DATE: 07/11/2001
ISSUE DATE:

SAUNDRA BALLENGER, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

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2/19/2

03-06-2002



TEET

102002966

T The Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Achim Krotz

November 30, 2001

First Assignor

Date of Execution

Rahul Mehta

December 7, 2001

Second Assignor

Date of Execution

Third Assignor

Date of Execution

Fourth Assignor

Date of Execution

Fifth Assignor

Date of Execution

Sixth Assignor

Date of Execution

Additional name(s) of conveying party(ies) attached? YES NO

2. Name and address of receiving party(ies):

Name: ISIS Pharmaceuticals, Inc.

Street Address: 2292 Faraday Avenue

City: Carlsbad

State California

ZIP 92008

Additional name(s) & address attached? YES NO

3. Nature of Conveyance (check only one):

 New Assignment Merger License Agreement Security Agreement Change of Name Other: Cross-reference of Assignment filed in United States Application No. ____ /____,____, recorded on _____ at Reel No. _____ and Frame No. _____

4. Identification of Application number(s), patent number(s) OR date of execution of application to which assignment refers:

Application Nos.:

Patent Nos.:

Date application was signed by the first named executing inventor

09/902,953 filed July 11, 2001

(Fill-in this date only if assignment is filed together with a new application)

5. Name and address of party to whom correspondence concerning documents should be mailed:

Name: Emma R. Dailey
 WOODCOCK WASHBURN LLP
 One Liberty Place - 46th Floor
 Philadelphia, Pennsylvania 19103-7301
 215-568-3100

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$40.00

 Enclosed Authorized to be charged to Deposit Account Number 23-3050

8. Please charge any deficiency or credit any overpayment to Deposit Account Number 23-3050

03/05/2002 TDIAZI 00000225 09902953
 01 FC:581 40.00 DP

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Emma R. Dailey/48,491

Name of Person Signing/Reg. No.

Signature

January 30, 2002

Date

Total number of pages including cover sheet, assignment document and additional pages attached thereto: 5

Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks
 Box Assignments
 Washington, D.C. 20231

A S S I G N M E N T

WHEREAS, we, Achim Krotz of San Diego, California and Rahul Mehta of San Marcos, California, have invented a certain invention entitled **Enhancement of the Stability of Oligonucleotides Comprising Phosphorthioate Linkages by Addition of Water-Soluble Antioxidants**, for which we have made an application for Letters Patent of the United States, said application having been filed **July 11, 2001** and assigned Application No. **09/902,953**; and

WHEREAS, ISIS Pharmaceuticals, Inc. hereinafter referred to as the assignee, of 2292 Faraday Avenue, Carlsbad CA, a corporation of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to each of us in hand paid by said assignee, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said assignors, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in our names applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

AND we hereby covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith, and we further covenant and agree that we will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees, or legal representatives, and each of us agrees to communicate to said assignee or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, we have hereunto set our hands and seals.

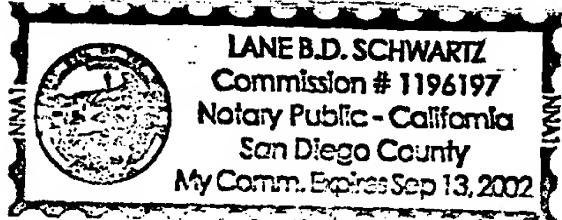
Dated: 11/30, 2001

Achim Krotz
Achim Krotz

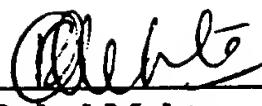
State of California)
) ss.
County of San Diego)

On this 30th day of November, 2001, before me, the undersigned, a Notary Public for the state, personally appeared Achim Krotz, personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that ~~he/she~~ executed the same in ~~his/her~~ authorized capacity, and that by ~~his/her~~ signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.

WITNESS my hand and official seal.

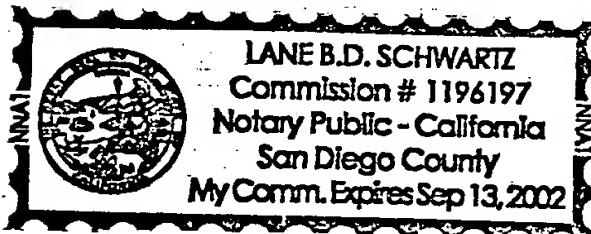


Lane B.D. Schwartz
Signature of Notary

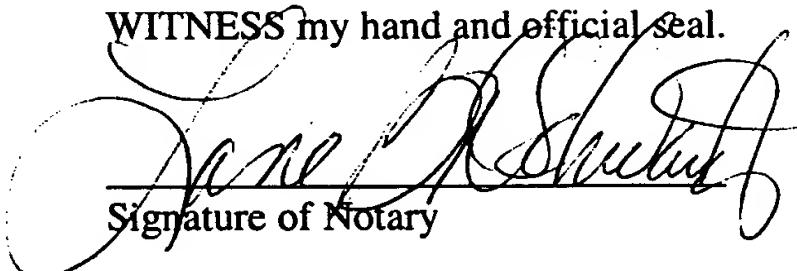
Dated: 12 - 7 -, 2001
Rahul Mehta

State of California)
) ss.
County of San Diego)

On this 7th day of December, 2001, before me, the undersigned, a Notary Public for the state, personally appeared **Rahul Mehta**, personally known to me/proved to me on the basis of satisfactory evidence to be the person who subscribed the foregoing Assignment and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.


Signature of Notary

**RECORDATION FORM COVER SHEET
PATENTS ONLY**

(Circular stamp: OIPE AUG 06 2003) The Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy ther of.

1. Name(s) of conveying party(ies):		2. Name and address of receiving party(ies):	
Achim Krotz First Assignor	November 30, 2001 Date of Execution	Name: ISIS Pharmaceuticals, Inc.	<i>(Circular stamp: REC AUG 08 2003)</i>
Rahul Mehta Second Assignor	December 7, 2001 Date of Execution	Street Address: 2292 Faraday Avenue City: Carlsbad State California ZIP 92008	<i>(Circular stamp: TECH CENTER 16)</i>
Third Assignor	Date of Execution	Additional name(s) & address attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Fourth Assignor	Date of Execution	3. Nature of Conveyance (check only one):	
Fifth Assignor	Date of Execution	<input checked="" type="checkbox"/> New Assignment <input type="checkbox"/> License Agreement <input type="checkbox"/> Change of Name	<input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Other:
Sixth Assignor	Date of Execution	<input type="checkbox"/> Cross-reference of Assignment filed in United States Application No. ____ /____,____, recorded on _____ at Reel No. ____ and Frame No. ____	
Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

4. Identification of Application number(s), patent number(s) OR date of execution of application to which assignment refers:

Application Nos.: 09/902,953 filed July 11, 2001	Patent Nos.: 	Date application was signed by the first named executing inventor <i>(Fill-in this date only if assignment is filed together with a new application)</i>
---	----------------------	---

5. Name and address of party to whom correspondence concerning documents should be mailed:

Name: Emma R. Dailey
WOODCOCK WASHBURN LLP
On Liberty Place - 46th Floor
Philadelphia, Pennsylvania 19103-7301
215-568-3100

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$40.00

Enclosed

Authorized to be charged to Deposit Account Number 23-3050

8. Please charge any deficiency or credit any overpayment to Deposit Account Number 23-3050

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Emma R. Dailey/48,491

Name of Person Signing/Reg. No.

Signature

January 30, 2002

Date

Total number of pages including cover sheet, assignment document and additional pages attached thereto: 5

Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231